

Claims

1. A luminescent fiber comprising at least one fiber-forming material with at least one inorganic luminophor pigment dispersed therein, characterized in that the inorganic luminophor pigment has an average particle size of about 1 to 30 pm.
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2. The luminescent fiber according to claim 1, wherein the inorganic luminophor pigment has an average particle size of about 4 to 20 pm.
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3. The luminescent fiber according to claim 2, wherein the inorganic luminophor pigment has an average particle size of about 5 to 20 pm.
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4. The luminescent fiber according to claim 1, wherein the inorganic luminophor pigment is present in an amount of more than about 5 to 50%, by weight, based on the water-free total fiber mass.
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5. The luminescent fiber according to claim 4, wherein the inorganic luminophor pigment in an amount of more than about 7 to 40%, by weight, based on the water-free total fiber mass.
6. The luminescent fiber according to claim 5, wherein the inorganic luminophor pigment is present in an amount of about 10 to 20%, by weight based on the water-free total fiber mass.

7. The luminescent fiber according to claim 2, wherein the inorganic luminophor pigment is present in an amount of more than 5 to 50%, by weight, based on the water-free total fiber mass.

5 8. The luminescent fiber according to claim 1, wherein the fiber-forming material is viscose.

10 9. The luminescent fiber according to claim 1, wherein the fiber-forming material is viscose, the inorganic luminophor pigment has an average particle size of about 5 to 20 pm, and wherein the inorganic luminophor pigment is present in an amount of more than 5 to 50%, by weight, based on the water-free total fiber mass.

15 10. The luminescent fiber according to claim 1, wherein the luminophor pigment produces at least in part a phosphorescence effect on excitation by visible or ultraviolet radiation.

20 11. The luminescent fiber according to claim 10, wherein the fiber-forming material is viscose, the inorganic luminophor pigment has an average particle size of about 5 to 20 pm, and wherein the ingorganic luminophor pigment is present in the amount of more than 5 to 50%, by weight, based on the water-free total fiber mass.

25 12. The luminescent fiber according to claim 10, wherein the luminophor pigment is selected from the group consisting of zinc sulfides, zinc cadmium sulfides, alkaline earth metal aluminates, alkaline earth metal sulfides or alkaline

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earth metal silicates, each doped with one or more transition metal elements or lanthanoid elements.

13. The luminescent fiber according to claim 1, wherein the inorganic
5 luminophor pigment produces at least in part a fluorescence effect on excitation by ultraviolet radiation.

14. The luminescent fiber according to claim 13, wherein the fiber-forming material is viscose, the inorganic luminophor pigment has an average particle size of about 5 to 20 pm, and wherein the inorganic luminophor pigment is present in an amount of more than 5 to 50% by weight, based on the water-free total fiber mass.

15. The luminescent fiber according to claim 13, wherein the luminophor pigment consists of zinc sulfides, oxides, oxysulfides, silicates or aluminates, each doped with one or more transition metal elements or lanthanoid elements.

16. The luminescent fiber according to claim 1, wherein the inorganic luminophor pigment is at least in part excitable by infrared radiation.

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17. The luminescent fiber according to claim 16, wherein the fiber-forming material is viscose, the inorganic luminophor pigment has an average particle size of about 5 to 20 pm, and wherein the inorganic luminophor pigment is present in an amount of more than 5 to 50%, by weight, based on the water-free total fiber mass.

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18. A process for producing luminescent fiber according to claim 1, comprising the steps of adding the inorganic luminophor pigment to the fiber-forming material or a solution thereof; and spinning fiber therefrom.

5 19. A process for producing luminescent fiber according to claim 9, comprising the steps of adding the inorganic luminophor pigment to the fiber-forming material or a solution thereof; and spinning fiber therefrom.

10 20. A fiber-containing article comprising a luminescent fiber wherein the luminescent fiber comprises at least one fiber-forming material with at least one inorganic luminophor pigment dispersed therein, characterized in that the inorganic luminophor pigment has an average particle size 1 to 30 pm

15 21. The fiber-containing article according to claim 20, wherein the article is a document of value.

20 22. The fiber-containing article according to claim 20, wherein fiber-forming material is viscose, the inorganic luminophor pigment has an average particle size of about 5 to 20 pm, and wherein the inorganic luminophor pigment is present in an amount of more than 5 to 50%, by weight, based on the water-free total fiber mass.